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As you know, the annual supply of influenza vaccine, and the timing of its distribution, cannot be guaranteed in any year. As of the date of this program – August 10, 2006- influenza vaccine manufacturers project that about 100 million doses of influenza vaccine will be available in the U.S. for use during the 2006-2007 influenza season. An additional 15 million to 20 million doses may be available if a new vaccine is licensed in 2006. To avoid missed opportunities for vaccination persons at high risk of serious complications of influenza and their household contacts should be offered vaccine beginning in September during routine healthcare visits or during hospitalizations.

In facilities housing older persons, such as long term care facilities, vaccination before October should be avoided. This is because antibody levels in such persons can begin to decline within a few months after vaccination. ACIP does NOT recommend a second dose of influenza vaccine in the same season except for children younger than 9 years of age being vaccinated for the first time. This is a very common question we receive. For adults, only one dose per season is recommended, even if the first dose was given in September. The optimal time for influenza vaccination is usually during October and November. In October, vaccination in provider-based settings should start or continue for all persons- both high risk and healthy- and extend throughout November.

Vaccination of children aged 6 months to 9 years who are receiving vaccine for the first time should also begin in October, if not done earlier. This is because these children need a second dose 4 to 6 weeks after the first dose. CDC and other public health agencies will continuously monitor this year’s vaccine supply. If necessary, recommendations will be made regarding the need for prioritized, or tiered timing of inactivated influenza vaccination of different risk groups. Because LAIV is approved for use in healthy persons 5 through 49 years of age its use will not be subject to tiered timing. ACIP recommends that providers continue to offer influenza vaccine in December, especially to those at high risk of complications and to healthcare personnel. Providers should continue to vaccinate throughout influenza season- typically December through March- even after influenza activity has been documented in the community. Let’s review briefly groups at increased risk for complications of influenza. Persons at increased risk for complications of influenza are the principle target group for

your inactivated influenza vaccination programs. Age is an important risk factor, in particular adults 65 years and older who are at increased risk of complications of influenza. However, ACIP recommends routine vaccination for persons 50 years and older because persons 50 to 64 years of age have an increased prevalence of high risk conditions. As we mentioned earlier children 59 months of age and younger are at increased risk of complications or healthcare visits.

In addition to age, the medical conditions that increase the risk of influenza complications include: pulmonary disease such as emphysema and asthma; cardiovascular disease; and metabolic disease such as diabetes. Other high risk conditions include renal dysfunction, such as chronic renal failure or nephropathy; hemoglobinopathy; and immunosuppression, including HIV infection. Persons with conditions that compromise respiratory function or increase the risk of aspiration are at increased risk of complications of influenza. Examples of these conditions are spinal cord injury, stroke, and seizure disorder. In addition to persons with chronic illnesses, other risk groups include residents of long term care facilities and persons 6 months to 18 years of age receiving chronic aspirin therapy because of the risk of Reye syndrome. Finally, pregnant women should be routinely vaccinated. Pregnant women are a group at increased risk for complications of influenza. Excess deaths from influenza among pregnant women were documented during the pandemics of 1918-1919, and 1957-1958. Case reports and limited studies also indicate that pregnancy can increase the risk for serious medical complications of influenza. A study published in 1998 found that the risk of hospitalization for influenza-related complications was more than 4 times higher for women in the second or third trimester of pregnancy than among nonpregnant women. The risk of complications for these pregnant women was comparable to nonpregnant women with high-risk medical conditions.

ACIP recommends vaccination with inactivated influenza vaccine for ALL women who will be pregnant during influenza season, December through March. Vaccination can occur in any trimester of pregnancy. Pregnant women should receive only inactivated influenza vaccine. Live attenuated influenza vaccine is contraindicated during pregnancy. Pregnant women may receive inactivated influenza vaccine either with or without thimerosal as a preservative. So far we have discussed vaccination of persons who are at increased risk of complications of influenza. It is also critical to vaccinate persons who are in close contact and can transmit influenza to those at increased risk of

complications. This group includes household members of high-risk persons, healthcare personnel- including home care- and employees of long-term care facilities- and not just the nurses and doctors. Do not forget the nursing aides, housekeepers, physical therapists, dieticians, and anyone else who shares air with the patients. Healthcare personnel are a high priority for early supplies of influenza vaccine. Healthcare personnel are often implicated in introducing influenza into healthcare settings and causing outbreaks among patients. Outbreaks among patients have been reported in a number of healthcare settings including ICUs, neonatal intensive care units, and nursing homes. Yet influenza vaccination levels among healthcare personnel are abysmally low. Vaccination of healthcare personnel is a high priority for reducing the effect of influenza in healthcare settings. We asked Dr. Michele Pearson, a medical epidemiologist in the CDC Division of Healthcare Quality Promotion to discuss this issue in more detail.

Influenza transmission and outbreaks in hospitals and nursing homes are well documented. Healthcare personnel often work while they are ill, exposing vulnerable patients and their coworkers to the virus. To make matters even worse, about half of influenza infections are asymptomatic. Therefore, infected healthcare personnel may transmit the infection even if they are not symptomatic since influenza viruses can be shed a day before symptoms develop. So even someone who doesn’t develop symptoms or has very mild symptoms may be able to transmit influenza to another person.

Influenza vaccination of healthcare personnel has many documented benefits including reduction in nosocomial influenza among patients, and reduction of influenza-related death among nursing home residents. A reduction in illness and illness-related absenteeism among vaccinated staff has been demonstrated in several studies. Influenza vaccination can also reduce both direct medical costs and indirect costs from work absenteeism. Despite known benefits of influenza vaccination to both their patients and themselves, only 42% of U.S. healthcare personnel were vaccinated in 2004. That means almost three out of five healthcare workers put themselves, their families, and their patients at risk of a potentially deadly infection. Healthcare personnel cite a number of reasons for not receiving influenza vaccine. These reasons include concern about vaccine adverse events or vaccine safety, including the misperception that the injectable vaccine could cause influenza; a perception of a low personal risk of influenza virus infection; insufficient time or inconvenience of receiving the vaccine; reliance on homeopathic

medications; avoidance of all medications; and, interestingly, fear of needles. Factors that facilitate vaccine acceptance include a desire for self-protection; previous receipt of influenza vaccine; a desire to protect patients; and perceived effectiveness of the vaccine.

To help healthcare facilities improve influenza vaccination rates among their staff, the Healthcare Infection Control Practices Advisory Committee, or HICPAC, and the Advisory Committee on Immunization Practices – ACIP- collaborated to develop a document to address this issue and provide recommendations for improving vaccination levels. The document is titled- appropriately enough- Influenza Vaccination of Healthcare Personnel, and was published in the Morbidity and Mortality Weekly Report on February 24, 2006. The recommendations are targeted at healthcare facility administrators, infection control professionals, and occupational health personnel responsible for influenza vaccination programs and influenza infection control programs in their institutions. The report supplements ACIP's annual statement on the use of influenza vaccine and antiviral agents.

HICPAC and ACIP recommend that ALL healthcare workers without valid medical contraindications be vaccinated annually against influenza. Facilities that employ healthcare personnel are strongly encouraged to provide vaccine to their staff by using evidence-based approaches that maximize vaccination rates. Here are some of the evidence-based strategies that have been shown to improve influenza vaccination rates among healthcare personnel. First and foremost, healthcare personnel need to receive education about the need to protect themselves and their patients. Role models are important. Vaccination of senior medical staff, opinion leaders, and facility administrators has been associated with higher vaccination acceptance among staff members under their leadership. Reduction of financial and time barriers by providing free vaccine in locations and at times that are easily accessible. Vaccine provided by mobile carts has been associated with increased vaccine acceptance. Finally, influenza vaccination coverage in the facility should be monitored and reported. Posting of vaccination coverage levels in different areas of the facility is a component of a successful vaccination program. Monitoring coverage by facility area or occupational group allows facilities to identify where vaccination levels are low and interventions should be targeted. Monitoring and reporting vaccination rates could be used to create friendly competition between various units in the facility. You could even provide an incentive to the unit with

the highest vaccination rate. If staff won't be vaccinated to protect themselves and their patients, they might do it for a pizza.

Facilities also should consider obtaining signed declination statements from healthcare personnel who refuse vaccination for reasons other than medical contraindications. The declination form shown here was published in the November 2005 issue of Infection Control and Hospital Epidemiology. Active declination forms can assist facilities in identifying personnel who might require targeted education or other interventions to overcome barriers to vaccine acceptance. In addition, collection of such information will allow healthcare facilities to determine what proportion of their staff are reached and offered vaccine.

Finally, legislation and regulation may be used to improve influenza vaccination levels. Legislative and regulatory efforts have favorably affected hepatitis B vaccination rates among healthcare personnel. Several states have enacted regulations regarding influenza vaccination of staff in long-term care facilities. However, data are not yet available regarding the impact of these regulations. Studies have shown that use of these strategies can improve influenza coverage among healthcare staff. Healthcare personnel owe it to their patients, their families, and to themselves to be protected from influenza by receiving the vaccine every year. We hope you will review this useful document and implement these proven strategies in your facility. YOUR health can help insure the health of your patients.

To access the most accurate and relevant health information that affects you, your family and your community, please visit www.cdc.gov.